Natural Gas Market Outlook 2006-2016

California Energy Commission and California Public Utility Commission

Comments of Sound Energy Solutions
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Panel II.D. LNG Facilities

Introduction

My name is Thomas E. Giles, and I am the Chief Operating Officer for the Sound Energy Solutions (SES), liquefied natural gas (LNG) Import Terminal Project in Long Beach, California. I want to commend the CPUC and the CEC for holding this workshop to plan for California's future natural gas needs, and I appreciate the opportunity to participate in the workshop on behalf of SES.

If I were to sum up my comments to this opportunity in a single thought, it would be this: California should plan to include LNG supplies in its gas supply mix, and should actively support LNG terminal development in the state.

I. Domestic Natural Gas Production Is Declining

Currently, natural gas meets about one-third of California's energy needs, and it is the fastest growing major fuel source. As you have no doubt heard from other speakers at this workshop, natural gas production in the lower 48 states and Canada is in a steady decline. While the U.S. still has large reserves of natural gas, domestic production has peaked and demand is starting to outstrip supply. Natural gas is the preferred fuel for electric generation, in large part because it's a clean burning fuel. Available supply is having difficulty keeping up with demand,

even with large Canadian imports. Wellhead prices remain high, and vulnerable to spikes. The Energy Information Administration predicts that natural gas spot prices will average $4.50 - $5.00 this winter. California must review existing natural gas supply sources and delivery systems. California must also examine new potential gas supply sources if the growing demand is to be met.

LNG imports provide a reliable and competitively priced supplement to California's traditional sources of supply. Natural gas supplies are plentiful throughout the world, but substantial reserves of gas are located in areas without direct, easy access to markets and are thus "stranded." Many of these "stranded" supplies are located in Pacific Rim nations and are already developed, or being developed for export in the growing LNG trade. Liquefying that supply and shipping it in LNG tankers makes it possible to bring that supply to the U.S. At the same time, dramatic reductions in the cost of liquefaction and shipping make that supply economically attractive for U.S. consumers. Importing these supplies directly into a major market, such as southern California, also allows for the distribution of vast amounts of clean-burning LNG vehicle fuel.

Mitsubishi Corporation, the parent company of SES, has been active in the Pacific Rim LNG trade for almost 40 years. Mitsubishi has supplied LNG to numerous Asian markets, and today supplies over 50% of Japan's natural gas supplies. Mitsubishi has interests in natural gas production and liquefaction projects in several Asian countries that were designed and built to supply LNG to Pacific Rim gas markets. California is an active and significant participant in Pacific Rim economic trade, but does not currently import any LNG. Mitsubishi believes that California is a natural gas market for the plentiful Pacific Rim natural gas supplies, and through the SES import terminal project, is proposing to provide access to those Asian supplies.

II. LNG imports are the near term solution

One of the important issues raised in this workshop is the appropriate role for LNG in the supply mix. SES believes that a diverse fuel mix is desirable, and that it should include renewable energy and increased conservation. Californians are to be applauded for responding to the recent energy crisis with a renewed commitment to conservation. New technologies are also to be encouraged, and we should look forward to a future in which those technologies will allow us to reduce our dependence on fossil fuels. In the short term, however, natural gas will continue to play an important role in our energy supply mix. LNG is an important bridge to that future.

Without LNG imports, consumers in California will continue to face price volatility and supply uncertainty. The National Petroleum Council (NPC) issued an important study this fall that found that there has been a fundamental shift in the natural gas supply/demand balance that has resulted in higher prices and volatility in recent years.[1] The NPC study predicts that traditional North American producing areas will provide 75% of the long-term U.S. gas needs, but will be unable to meet projected demand. The report found that greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating price levels and reducing volatility. However, it also found that power generators and industrial consumers are more dependent on gas-fired equipment and less able to respond to higher gas prices by utilizing alternate sources of energy. It concluded that new, large-scale resources such as LNG and Artic gas are available to meet the demand, but without Alaskan gas, imports must make up the difference between domestic production and consumption. Specifically, the NPC study

[1] National Petroleum Council, "Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy", September 25, 2003. (NPC Study) The National Petroleum Council is a federal advisory committee to the Secretary of Energy. http://www.npc.org.

concluded that the U.S. needs both seven new LNG import terminals and substantial Alaskan gas in order to prevent costs from rising above a level of $7.00.[2]

LNG imports are already beginning to have a positive impact on the gas supply picture as well as gas prices. Imports have grown from a total of 226 Bcf in 2000 to 381 Bcf in the first three quarters of this year alone. EIA projects that LNG imports will grow from 1% of U.S. natural gas consumption to more than 15% by 2025. [3] The recent re-activation of the existing terminals on the East Coast has already had a dampening impact on gas prices.

SES believes that LNG is a lower risk solution to the supply problem than many other alternatives, because of its established track record in other countries, the ample low cost supply of LNG, and the flexibility in delivery.

III. Dispelling the Myths

A. Safety

We have found in the community that the public welcomes education on LNG characteristics to dispel historical myths about the fuel. Safety continues to be a primary concern for those agencies that are reviewing the proposed LNG terminals throughout the U.S., and that is as it should be. LNG is not risk-free, but its risks are quite manageable, and have been greatly exaggerated.

NARUC, in cooperation with the University of Houston, has begun a national education program on LNG that should help educate both the public and state agencies around the country.

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[2] The NPC Study analyzed a "reactive" and a "balanced" case. The reactive case assumes the four existing U.S. import terminals will be fully utilized by 2007, and that seven additional terminals (and seven expansions) will be built in North America to meet gas demand through 2025. This would result in a total LNG import capacity of 12l5 BCF/D, with LNG providing 14% of the U.S. supply of natural gas by 2025. In the Balanced case, nine terminal projects and nine additional expansions are assumed built. This increases total LNG import capacity to 15 BCF/D or 17% of the U.S. supply of natural gas by 2025.

[3] EIA, 2203 Annual Energy Outlook, May, 2003. http:www.eia.doe.gov/oia/aeo

Unfortunately, however, a lot of misinformation about safety continues to circulate in the public domain.

LNG has been safely handled for many years.[4] LNG has a proven safety record with 33,000 carrier voyages covering 60 million miles with no major accidents over a 40-year history.[5] There are currently about 200 peakshaving and LNG storage facilities worldwide, some operating since the mid-60s. The U.S. has the largest number of LNG facilities in the world. There are 113 active LNG facilities spread across the U.S. with a higher concentration of the facilities in the northeast.

Numerous agencies provide thorough regulatory oversight over all aspects of an LNG project – design, construction, and operation – for both onshore and marine facilities and activities. These agencies keep a keen eye toward assuring safety and security. Depending on whether the project is onshore or offshore, the U.S. Coast Guard or FERC will approve the siting, construction, and operation of the facility. Such approval requires the compliance with all relevant federal, state and local permitting requirements. The Office of Pipeline Safety of the Department of Transportation enforces security at LNG terminals, while FERC conducts the pre- and post-approval reviews of safety at the terminals. Biennial reviews by FERC continue for the life of the terminal. The Coast Guard enforces offshore shipping safety, and approves vessel-operating plans. These permitting and inspection activities are well documented and monitored.

B. Cost

LNG will be cost competitive with other sources of natural gas. Some have expressed concern that LNG will be a high-priced alternative supply source, but this concern is misplaced. The open market will determine gas prices, and thus the viability of each LNG import terminal

[4] *Introduction to LNG*, *An overview on LNG, its properties, the LNG industry, safety considerations,* University of Houston Law Center, Institute for Energy, Law & Enterprise, January 2003. www.energy.uh.edu.

project. It is important to remember that there will be no subsidies for terminal owners/importers. They will have to compete against other LNG importers, interstate pipelines, Canadian supplies, and domestic production.

In fact, the cost of imported LNG has fallen dramatically. The cost of liquefaction projects has fallen, due to increased competition and technological advances, including more efficient turbines to power refrigeration units and a new generation of pumps. Vigorous competition among shipyards has also driven down the cost of LNG tankers. There are currently 141 LNG tankers in operation, and 54 more are on order at shipyards. The newer ships are also large, can hold more cargo, and operate more efficiently than other vessels.

SES believes that LNG will simply be part of buyers' portfolio of gas supplies, and that it will not win that market share unless it is competitively priced. LNG may well be attractive for long-term contracts, because of its reliability. However, there is no guaranteed market, either short or long term. On the other hand, terminal operators have substantial money at risk for development of a project, including not only the import terminal, but also a huge upstream investment. Therefore, they will have an incentive to meet the prevailing market price in order to recover that investment.

C. Reliability

Supply reliability is a key characteristic of the LNG industry. A total of 40-50 new upstream/liquefaction projects are now onstream, under construction, or planned throughout the world. LNG for California would likely come from existing and new Pacific Rim gas reserves, but there are LNG supplies from other areas of the world that could also be economically delivered to California. In fact, with this widening of supply options, market access is set to

[5] NPC Study, Summary at page 36.

become the key constraint on increased U.S. LNG imports. In other words, more terminal capacity is the key to increased reliability and availability of supply.

Concerns have also been expressed about the political stability of source countries. SES believes that there is growing access to a diverse set of sources for LNG supply in the Pacific Rim, including Indonesia, Australia, Russia and Malaysia. Over time, LNG markets will grow increasingly liquid, and more gas resources will be available for LNG imports. This diversification, combined with the industry's long history of steady performance reduces the likelihood of supply disruptions.

IV. Sound Energy Solutions Project

A. General Project Description

SES is developing an LNG import terminal in the Port of Long Beach, in Long Beach California. The terminal is designed to import LNG from Asia and abroad to the U.S. for sale in California's non-core natural gas markets, and to provide liquid vehicle fuel to customers in the Los Angeles basin. The terminal will be capable of sending out 700,000 MMscfd per day of natural gas through an interconnecting pipeline to SoCal Gas. The LNG will be brought to the U.S. in ocean-going LNG tankers, unloaded at the SES terminal, and temporarily stored in two LNG storage tanks. The natural gas liquids will then be recovered, the LNG vaporized, and the resulting natural gas sendout of the terminal into an interconnecting pipeline.

The SES terminal will be different from other terminals in several key respects. The interconnecting pipeline will be constructed, owned and operated by a third party, not SES. SES will offer no utility services to the public. Unlike existing terminals, such as the Cove Point terminal in Maryland, or the Trunkline terminal in Louisiana, or some of the proposed terminals, the SES terminal will be a proprietary facility. SES will not offer storage capacity in its terminal

to third parties, or any other third party services. SES intends to simply sell natural gas and LNG for vehicle fuel.

SES also intends to construct a stripping facility on site, in order to be able to provide natural gas that meets the existing gas quality standards in the SoCal Gas tariff, as well as the CARB standards for vehicle fuel. We do not expect to request any changes to those standards. Moreover, we do not anticipate that significant upgrades will be required for the existing SoCal Gas infrastructure to be able to accommodate the natural gas output of the terminal.

In June of this year, SES requested that the Federal Energy Regulatory Commission (FERC) allow SES to pursue its request for authority to site, construct and operate the LNG import terminal pursuant to the pre-filing process employed by FERC to implement its responsibilities as the lead agency for implementation of National Environmental Policy Act (NEPA) review. On July 11, 2003, the FERC granted SES's request, and at the same time announced that the Port of Long Beach (POLB) will be the lead agency for review of the project pursuant to the California Environmental Quality Act (CEQA), and that the two agencies will produce a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Projects can be expedited only if the company follows the NEPA pre-filing guidelines, public involvement is made an integral part of the project planning process, and the company works in partnership with the agencies. Both the CPUC and the CEC have designated themselves "responsible agencies" and are participating in the pre-filing process. SES anticipates filing its FERC application in January 2004, and receiving its FERC authorization to site, construct, and operate the terminal by the fall of 2004.

B. Benefits

The direct benefits of the SES project for Californians fall into two broad categories: consumer benefits and environmental benefits. For consumers, a substantial supply of LNG will place downward pressure on gas prices in California, helping to avoid price spikes and keeping gas prices at a level lower that they would be without LNG imports. The impact of LNG imports has been demonstrated by the recent start-up of LNG imports at the Cove Point terminal, which has depressed prices in the Mid-Atlantic region. In a broader sense, of course, more natural supplies will generally ease the upward price pressure now being experienced in California, and reduce the likelihood of the dramatic price spikes that occurred during the winter of 2000-2001 will recur.

In addition, the market area location of the SES project has direct and substantial benefits to consumers. It means lower transportation costs, since no interstate pipeline transportation rates will have to be paid by customers. The market location also avoids potential supply disruptions and the chronic curtailment of interstate pipeline supplies. Finally, since LNG is competitively priced, and there is no need for costly changes in gas specifications or upgrades in existing pipeline infrastructure, LNG from the SES project can be a cost-effective option for expanding gas buyers' supply portfolios.

The environmental benefits of LNG are equally compelling. Major reductions in particulate emissions in the LA Basin could be achieved by converting diesel vehicles to LNG. One estimate is that substituting LNG for diesel could reduce emissions by approximately 85% of NOx and 90% of SOx and particulate matter. A June 2003 editorial in the Long Beach Press-Telegram noted, "An LNG terminal in Long Beach would be a major help in cleaning up Southern California's No. 1 source of diesel pollution." It should also be noted that only onshore

facilities could provide vehicle fuel, since the offshore facilities are designed to vaporize the LNG offshore and deliver gas through pipelines to the shore.

V. Conclusion: Why LNG, why now?

SES is grateful for the remarkable community support it has received. We are also grateful for the continuing participation of the various state agencies in the FERC pre-filing process. SES is committed to developing a safe, reliable source of natural gas and vehicle fuel for the State of California. We believe that importing LNG is good for California consumers, good for gas prices, and good for the air in the LA Basin. As U.S. Senator Dianne Feinstein stated, "LNG is an attractive means of satisfying our State's increasing demand for natural gas and clean vehicle fuels."[6] The support of the CPUC and CEC for construction of new LNG import terminals is critical for Californians to reap the benefits of LNG imports.

[6] September 30, 2003 Letter of U.S. Senator Dianne Feinstein to Mayor Beverly O'Neill, City of Long Beach, California.